

**SEMINOLE STATE COLLEGE
ASSOCIATE IN SCIENCE IN PRE-ENGINEERING (214)**

Degree Program Evaluation for 2019-20

The information required to complete this annual evaluation process mirrors the information required by OSRHE Policy on Academic Program Review. Specifically, it covers the following Vitality of the Program items: (1) Program Objectives and Goals, (2) Quality Indicators, (3) Minimum Productivity Indicators, and (4) Other Quantitative Measures (for additional information see OSRHE Policy 3.7.5.B.1-4).

1. Program Objectives and Goals

Associate in Science in Pre-Engineering Degree Program Outcomes

Outcomes for Transfer Degree Programs

- Outcome 1: Demonstrate successful articulation of Seminole State College transfer degree programs to state and professional institutions of higher learning granting professional and baccalaureate degrees in Oklahoma.
- Outcome 2: Demonstrate successful academic achievement by Seminole State College transfer degree students at primary receiving state baccalaureate institutions of higher learning in Oklahoma. Successful academic achievement is defined as the maintenance of satisfactory academic progress toward degree completion as determined by the receiving institution.

Outcomes Specific to Associate in Science in Pre-Engineering

- Outcome 3: Define and explain fundamental concepts, principles, and theories of engineering.
- Outcome 4: Gather scientific information through experiments to interpret and express the results of experiments.
- Outcome 5: Demonstrate problem-solving skills foundational to understanding of engineering concepts.
- Outcome 6: Demonstrate preparation for continued pursuit of engineering education leading to a baccalaureate degree in an engineering area.

2. Quality Indicators

Combined Course Embedded Assessment Results for 2019-20 for Major Field Courses in Degree Program

General Education Outcomes	Pre-Test % Correct	Post-Test % Correct	Difference
General Education Outcome 1	7%	80%	73%
General Education Outcome 2	9%	73%	63%
General Education Outcome 3	10%	69%	59%
General Education Outcome 4	8%	67%	58%
Specific Outcomes for AS Pre-Engineering	Pre-Test % Correct	Post-Test % Correct	Difference
Degree Program Outcome 3	7%	70%	64%
Degree Program Outcome 4	8%	74%	66%
Degree Program Outcome 5	7%	68%	62%
Degree Program Outcome 6	8%	74%	66%

Other Data Indicating Quality Relevant to Degree Program Major Field

Degree Program Enrollment by Ethnicity

Academic Year	Ethnicity	Summer 2019		Fall 2019		Spring 2020	
2019-20	Total Students		100%	31	100%	26	100%
	Black	0	0%	1	3%	1	4%
	Indian	1	25%	8	26%	6	23%
	Asian	0	0%	0	0%	0	0%
	Hispanic	1	25%	2	6%	3	11%
	Hawaiian/Pacific Islander	0	0%	0	0%	0	0%
	White	2	50%	20	65%	16	62%
	Undeclared	0	0%	0	0%	0	0%

Degree Program Enrollment by Gender

Academic Year	Gender	Summer 2019	Fall 2019	Spring 2020
2019-20	Male	3	26	23
	Female	1	5	3

Student Feedback on Instruction:

The average response scores ranged from 4.5 to 4.8 for the rated scale questions. Therefore, all of the averaged responses fell between "usually applies" and "almost always applies" with those responses describing desired attributes or behaviors. The average response score for the rated-scale questions pertaining to all classes was 4.6.

Graduate Exit Survey:

When asked to assess their overall experience at SSC, 84.2% of the students rated the educational experience as excellent or above average. Over 83% of the students stated they would definitely or probably choose Seminole State College again if starting over. Students listed professors consistently as one of the greatest strength at SSC. Students cited class size, staff, and affordability as other strengths.

Collegiate Assessment of Academic Proficiency (CAAP) Test:

This data would not be relevant to this degree option as SSC did not offer the CAAP Test during the first year of this degree program and is now offering the ETS.

Educational Testing Center Proficiency Profile (ETS):

The Educational Testing Center (ETS) Proficiency Profile has replaced the CAAP as a component of its Assessment of General Education. This assessment is a nationally recognized academic test designed to measure general education foundational skills typically attained in the first two years of college. SSC students scored 0.3 points below the national mean in Critical Thinking, 1.3 points below the national mean in Mathematics, and 0.5 points below the national mean in Natural Science.

Other Quality Indicators: none

3. Minimum Productivity Indicators

Productivity Indicators

Academic Year	Semester	Declared Majors	Graduates
2019-20	Summer 2019	4	0
	Fall 2019	31	0
	Spring 2020	26	4

Does the degree program meet the minimum OSRHE standards for productivity this year?

Majors Enrolled (25 per year): **Yes/No**

Degree Conferred (5 per year): **Yes/No**

Comments/Analysis:

The requirements for the Pre-Engineering degree changed to better prepare students for transfer to the four-year institution programs across the state and our recruitment and advising on campus have been working from incorrect information when advising students. This has contributed to a low number of students graduating at this time. If our declared major numbers stay the course, then we project that Seminole State College will graduate 8-9 students in Spring 2021 (which coincides with the national retention rate of 25% for engineering programs). We had originally projected to hit that goal during the Spring of 2020 but due to unusual circumstances due to COVID 19 our original projections were thrown off. We anticipate that the program growth will continue as planned once normal operations resume.

4. Other Quantitative Measures

Number of Sections Taught and Enrollment for Each Course in Major Field of Degree Program

Prefix	Number	Major Field Course Title	Number of Sections	Total Students	Ave. Class Size	Total Credit Hours Generated
ENGR	1113	Introduction to Engineering	1	16	16	48
MATH	2215	Calculus and Analytic Geometry I	2	36	18	180
MATH	2424	Calculus and Analytic Geometry II	2	23	12	92
MATH	2434	Calculus and Analytic Geometry III	1	10	10	40
MATH	2533	Differential Equations	1	9	9	27
PHYS	2114	General Physics I	1	30	30	120
PHYS	2211	Calculus Based Physics I	1	8	8	8
PHYS	2224	General Physics II	1	13	13	52
PHYS	2231	Calculus Based Physics II	1	7	7	7

Credit Hours Generated in Major Field Courses of Degree Program By Level (from table above)

Academic Year	1000 Level Credit Hours Generated	2000 Level Credit Hours Generated
2019-20	48	526

Note: Credit Hours Generated columns represent the student credit hours generated by all the major field courses of the degree program for the given academic year. The hours do not represent the number of student credit hours generated only by those students declaring this major.

Direct Instructional Costs

Academic Year	Instructional Costs*	Costs Shown By Division or Program?
2019-20	\$562,778	Science Division

*When cost data are not available by degree program, use total division budget for instructional costs for each degree program.

Credit Hours Generated by Courses in Major Field of Degree Program That Are Part of General Education Requirements in Other Degree Programs

Major Field Course Information			
Prefix	Number	Title	Credit Hours Generated
NA	NA	NA	

Faculty Teaching Major Field Courses in Degree Program

Name	Teaching Area	Highest Degree	Institution
Bryant, Melissa	Mathematics	M.Ed.	East Central University

Goeller, Linda	Mathematics	Ph.D.	Oklahoma State University
Tollett, Jarrod	Mathematics / Science/ Engineering	M.Ed.	East Central University
Carpenter, Emily	Mathematics	M.Ed.	Oklahoma State University
Stevenson, Kirsten	Mathematics	M.A.	University of Oklahoma
Current Full-Time Faculty From Other Divisions Teaching Major Courses in Degree Program (Instructors with ** beside their name teach only zero-level classes)			
Current Adjunct			
Troglin, Annette	Mathematics	M.Ed.	East Central University

5. Recommendations and Other Relevant Items: Describe recommendations, new developments or initiatives pertaining to degree program.

Expand program by 5 students. Recent grant funds from the Title III grant have allowed the campus to modernize the Physics classroom and begin to update the physics equipment for the Physics I and Physics II labs. This equipment will allow a greater focus on hands on learning and this action should produce a more fundamentally grounded graduate for transfer.